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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,506	12/14/2001	Heinz Koppl	1011-001-002	5589
27820	7590	04/05/2005	EXAMINER	
WITHROW & TERRANOVA, P.L.L.C. P.O. BOX 1287 CARY, NC 27512			STEVENS, THOMAS H	
			ART UNIT	PAPER NUMBER
			2123	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/017,506	KOPPL ET AL.	
	Examiner	Art Unit	
	Thomas H. Stevens	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 12/14/01.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-9 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-9 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 12/14/01 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 10/017,506.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12/14/01</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

1. Claims 1-9 were examined.

Specification

2. The specification is objected to for not following 37 CFR 1.77(b). The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

2a) As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

(2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

(f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

(h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication, which adequately describes the subject matter.

(i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

- (j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application, which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (k) Sequence Listing, See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Priority

- 3. Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application filed in Germany on 12/15/00. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not acknowledge the filing of any foreign application. A new oath, declaration or application data sheet is required in the body of which the present application should be identified by application number and filing date.

Improper Multiple Dependent Claims

- 3. Claims 5-7 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5,8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilkinson et al ("Assessment of UHF Power Amplifier Linearization by Measurement and Simulation (IEEE 1989)). Wilkinson et al., teaches a communication system simulator for nonlinear signals coupled with Volterra series representation (abstract).

Claim 1. A simulation method (title) determining nonlinear signal distortion (pg. 60, right column, lines 1-5) in an analog circuit (7), which is to be tested, for processing discrete multitone signals (DMT), with the simulation method having the following steps: application of a discrete multitone signal, (abstract) which has a number of uniformly spaced carrier for data transmission in range, the analog be tested (pg. 60, right column, 6th paragraph), and to digital filter suppression the output signal from the analog circuit (7), (pg.62, right column, 1st paragraph) which be tested, from the output signal from the digital filter (18) order to produce a difference signal, (c) adjustment of the filter (18) until the difference signal a minimum, with the adjusted digital filter forming an equivalent circuit of the analog circuit (a plurality of FETs: pg.62, right column, 1st paragraph; pg. 60, left column 5th paragraph, lines 3-5)) (d) application the discrete

multitone signal to the adjusted digital filter with least carrier frequency being suppressed, for measuring the intermodulation product of the adjusted digital filter (18) (pg. 62, left column, paragraph 7)

Claim 2. The simulation method as claimed in claim 1(title; pg.62, right column, 1st paragraph) wherein multitone signal calculated from the measured intermodulation product (title; pg.62, right column, 1st paragraph).

Claim 3. The simulation method in claim 1 or 2, (title; pg.62, right column, 1st paragraph) wherein the adjustable modeling filter discrete-time Volterra filter (abstract), or a neural network.

Claim 4. The simulation method as claimed of the preceding claims, (title; pg.62, right column, 1st paragraph) wherein the adjustable modeling filter (Design choice: making adjustable; see *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954)) (18) is connected in parallel with the analog circuit (7), which is to be tested.

Claim 5. The simulation method as claimed in one the preceding claims, (title; pg.62, right column, 1st paragraph) wherein adjusted modeling filter (Design choice: making adjustable; see *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954)) ((18), which forms equivalent circuit of analog circuit connected to further adjusted modeling filters,

which form equivalent circuits further analog circuits, in order generate an overall equivalent circuit for an analog overall circuit (pg. 60, left column, 5th paragraph).

Claim 8. A test arrangement for determining nonlinear (abstract) signal distortion (pg. 60, right column, lines 1-5) of analog circuit elements of signal processing circuit for signal processing of DMT signals having: (a) a signal generator (1) for producing a discrete multitone signal (b) (abstract) adjustable modeling filters (Design choice: making adjustable; see *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954)) (18) which are each connected in with associated analog circuit element (a plurality of FETs: pg. 62, right column, 1st paragraph; pg. 60, left column 5th paragraph, lines 3-5)) (7), with the signal inputs of the modeling filters (18) and of the analog circuit elements (7) being connected to the signal generator (c) subtraction circuits, which each subtract the output form a modeling filter (18) from the output signal from the associated analog circuit element (7) in order to form a difference signal; (d) an adjustment circuit, which compares the difference signals with a nominal value and adjust the modeling filters (Design choice: making adjustable; see *In re Stevens*, 212 F.2d 197, 101 USPQ 284 (CCPA 1954)) (18) until the difference signals match the nominal value (pg. 61, left column, last paragraph, lines 16-19); and having (e) a measurement circuit, which is connected to the outputs of the modeling filters (18) (pg. 61, right column, lines 19-28) for measuring the interconnection products (pg. 62, left column, paragraph 7) of the adjusted modeling filters (18).

Claim 9. The test arrangement as claimed in claim 8, (abstract) wherein the test circuit is followed by a calculation circuit (32) for calculating the multitone signal power ratio of the output signals, which are emitted from the modeling filter (18) (examiner assumes applicants are disclosing pg.6, lines 24-30 of the specification: pg. 62, left column, 4th paragraph).

Claim Rejections - 35 USC § 103

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 6 and 7 are rejected under 35 U.S.C. 103 (a) as obvious by Wilkinson et al., (IEEE 1989), in view of Hjartarson et al., (U.S. Patent 6,295,343 (2001)). Wilkinson et al., teaches a communication system simulator for nonlinear signals coupled with

Volterra series representation (abstract) that encompass negating AM distortion in AM circuits; but doesn't teach specific AM circuits.

Hjartarson et al. teaches a method and apparatus for combining voice card and XDSL line card functions with subscriber line interface circuit (SLIC) and digital subscriber lines (DSL).

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify Wilkinson et al., with Hjartarson et al. since separation of signals in a network (Hjartarson: column 2, lines 26-30), particular AM clear voice (Hjartarson: column 1, lines 20-25) is imperative for AM system performance (Wilkinson: pg. 60, left column, 1st paragraph and right column 1st column).

Claim 6. The simulation method as claimed preceding claims, (Wilkinson: title; pg.62, right column, 1st paragraph) wherein the analog overall circuit a DSL-SLIC circuit (Hjartarson: column 5, lines 5-15).

Claim 7. The simulation method as claimed one of the preceding claims, (Wilkinson: title; pg.62, right column, 1st paragraph ; Hjartarson: column 5, lines 5-15) wherein discrete multitone signals are generated in a signal generator (1).

Correspondence Information

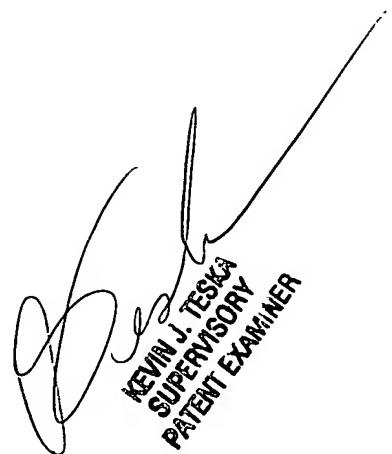
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-

3715, Monday-Friday (8:00 am- 4:30 pm) or contact Supervisor Mr. Kevin Teska at (571) 272-3716. Fax number is 571-273-3715.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

March 28, 2005

THS



KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER